

## No title available

### Bibliographic data

**Publication number:** DE7343826 (U)

**Publication date:**

**Inventor(s):**

**Applicant(s):** SCHIFFER M U C

**Classification:**

**- international:** A46B7/08; A46B7/00; (IPC1-7): A46B7/08

**- European:**

**Application number:** DED7343826U 00000000

Designation: Toothbrush subject-matter of the innovation is a toothbrush, which consists equipped brush body of with bristles, at which an elongated brush handle mounted is. Purpose of the innovation is in such a way an improvement of the toothbrush that bel the Obi lean type of the toothbrush use the interdental spaces better than cleaned turn.

Toothbrushes of the described type are since lengem known.

With their assistance the teeth are to become cleaned. Dabei@ arrives it not only on it that outward the pointing relative large areas of the teeth become cleaned, but also whereupon that the interdental spaces become cleaned. In zahnmedizinisch hygienischer Hinsicht ist die Reinigung der interdental spaces even particularly important, wave in the interdental spaces particularly light leftovers o, such. determine, so that these interdental spaces become then, if they do not become cleaned, carriers of prefered @ährböden for rot bacteria. If it comes there, then not only @mit agony lichem mouth smell is to be counted, but also on diseases

<Desc/Clms PAGE NUMBER 2>

the teeth and the Zahnfleisch, which makes again dental engagement required and pretty often that all too early use of decimal set. w from these reasons for a long time both in the specialized medical as well as in the popular literature it is pointed out that the cleaning of the interdental spaces is to be particularly considered.

In order this cleaning will reach, recommended, the toothbrush not only, as it conventional is, horizontal or from on the left of to the right and reversed at the teeth to be driven past, to move but also in vertical direction, thereby the bristles into the interdental spaces to penetrate to be able and, in the same verbleibend, upward or downward guided become and the particular interdental spaces to clean. Unfortunately teaches the experience that does not become practical applied despite these Empfehlungen the vertikal toothbrush movement, from whatever reasons always, possible wise is the horizontal toothbrush movement due to the lichen ore of building of toothbrushes and the conditional the grab attitude a type "natural movement" by it, which fällt lighter and unconsciously more near lies than the vertical movement, anyhow becomes the known toothbrushes horizontal nearly without exception moved. Therefore the disadvantage adheres to you that the interdental spaces become only insufficiently cleaned. Purpose of the innovation is it to overcome this disadvantage. In accordance with the innovation therefore proposed becomes for a toothbrush eigens of the beschriebenen type that the brush body is around gear axis of rotation longitudinal to the brush handle a rotatable at the brush handle journaled, whereby the brush body in both to

<Desc/Clms PAGE NUMBER 3>

Bristle handle is unterteilt and crosswise to the axis of rotation longitudinal direction by its axis of rotation into a larger bristle field part and into a smaller Borstenfeldteil. By the fact achieved becomes that the bristle field becomes offset with horizontal movement of the toothbrush in rotation, because the larger bristle field part exercises a larger torque due to Reibung at the teeth around the axis of rotation than the smaller Borstenfeldteil. The rotation of the bristle field has to the sequence that a mass of the bristles full-leads the rotation with a more or less large vertical movement component. That again has to the sequence that a movement vacates the bristles with large vertical movement component toward the vertical longitudinal tooth intermediate implements and the ten-gaps gründlich cleans. The innovation effected thus that the toothbrush accomplishes vertical cleaning movements also with on keeping the conventional horizontal

toothbrush movement with a part of the bristles and cleans therefore the interdental spaces better than so far.

After a further feature of the innovation it becomes vorgeschrieben that the brush body has circular plan view and eccentric rotatably supported is. By the fact achieved becomes that for the vertical Reinigungsrichtung likewise many bristles stand for order like for the horizontal cleaning direction. In addition achieved becomes that become moved during the rotary eccentric movement of the brush body no sharp or in any way unpleasant corners or edges in the mouth occur. Schließlich becomes achieved that the bursting field is in vertical direction large enough, in order to produce an effective torque around the exzentrische axis of rotation.

<Desc/Clms PAGE NUMBER 4>

EMI4.1

EMI4.2

EMI4.3

EMI4.4

<Desc/Clms PAGE NUMBER 5>

In accordance with Fig. 1 is at the front end of the Borstenstiel 1 a Bürstenkörperlager 2 provided, soft plate formed round in form of a circle is. Borstenstiel 1 and brush body camp 2 consist of a plastic, how it becomes so far already used for toothbrushes. Brush handle 1 and Bürstenkörperlager 2 are formed from a piece. The actual brush bodies 3, likewise in form of one Kreis formed and from plastic manufactured rounds plate, rests upon the brush body camp 2 and is around at Borstenstiel 1 journaled rotatable transverse to the brush handle 1 longitudinal axis of rotation 4. By SE! ne axis of rotation 4 is unterteilt the Bürstenkörper 3 in both to the brush handle 1 and the direction 5 into a larger Borstenfeldteil 6 and into a smaller Borstenfeldteil 7 crosswise longitudinal to the axis of rotation 4.

In all other respects the brush body is 3 in actual known manner with bristle tufts, e.g. 8, equipped.

The axis of rotation 4 is in the embodiment after Fig. 1 by a Stahistift formed, its axis in Fig. only dash-dotted indicated is, during in Fig. 2 his cross section sichtbarist.

Becomes the toothbrush in accordance with the Fig. 1 and 2 in conventional Weise moved horizontal attached to the teeth and, z. B. to the right toward the Pfells 9 in Fig. 2 drawn, the so effected friction between the Borstenbüschels, e.g. 8, and the teeth that on the brush body 3 a in clockwise direction acting Drehmoment arises around the axis of rotation 4, far the torque generated of the larger Borstenfeldteil 6 larger is than the torque generated of the kleineren bristle field part of 7, which ent approximately works. The resultant torque works therefore in  
<Desc/Cllms PAGE NUMBER 6>

Clockwise direction. If thus the toothbrush becomes toward the arrow 9 moved, the brush body 3 the bottom action of the resultant torque turns in the clockwise direction. The brush body 3 takes the bristle tufts siltenden in it, e.g. 8, also. That has to the sequence that the Bostenbüschel, which relative to the axis of rotation 4 implements an arcuate movement implements relative to the teeth a curvilinear movement, which is neither linear nor arcuate one, but has horizontal and vertical movement components. Thus for instance the bristle tuft becomes 8 in Fig. 2 then, if the toothbrush becomes taken off from the drawn (link) position toward the arrow 9 (to the right) drawn position moved dotted into those, approximately on the broken line 10 moved. When therefore in Fig. 2 the toothbrush with the axis of rotation 4 around the distance 11 to the right moved will, becomes the bristle tuft 8 along the line 10 in vertikaler direction around the distance 12 upward moved. One can also say that the Borstenbüschel 8 pray horizontal movement of the toothbrush a movement with vertical component experiences, which vertical movement of the bristle tuft 8 effected now that the Borstenbüschel verbiebt itself 8 no more, as earlier, crosswise waiter the Zahnnzwischenräume hinwe@ moved, but more prolonged in the interdental spaces and moved, which has to the sequence that the interdental spaces become thorough cleaned.

If the toothbrush becomes in the described manner used, then the brush body accomplishes 3 relative to the brush handle 1 pivotal motions, z. B. taken off from the drawn position in Fig. 2 into the there dotted drawn position. The circular formation of the Bürstenkörperlagern 2 and the brushing

<Desc/Cllms PAGE NUMBER 7>

body it cause with the fact that the Zahnbürste in the oral cavity pleasant is felt, because despite the pivotal motions no sharp or unpleasant corners or edges arise during swivelling.

In accordance with Fig 3 the axis of rotation 4 can become also by a plastic tap moulded on to the brush handle 1 formed, in a bearing bore intervenes, which is into the brush body 3 formed. However the brush body 3 becomes something weakened, why, where the pin 13 sits, bristle tufts inserted is not to become to be able, it, the brush body 3 became relative thick formed.

Therefore the embodiment appears favourable after Fig. 4, bei which the pin 14 to the brush body 3 is moulded on, while the bearing bore is in the Bürstenstiel 1 formed. In accordance with Fig. 4 is the front end of the pin 14 in the type of a push button with a light thickening ausgeformt, so that the brush body can become 3 1 attached like a push button to the brush body. Foreseen on the light assembly arises the possibility to replace the brush body 3 light and rapid against a spare brush body.

Wesentlich für die Neuerung ist, dass bei horizontaler Bewegung der Zahnbürste Infolge exzentrischer Lagerung des drehbar gelagerten Bürstenkörpers eine Schwenkbewegung desseibenergibt, durch welche die Borsten auch eine vertikale Bewegungskomponente erfahren. There is deshalb in the frame of the innovation opposite the beschriebenen embodiments modifications possible. So z.B. the brush body also elliptical formed become.

Also it is possible to arrange the axis of rotation extreme eccentric,

<Desc/Clms PAGE NUMBER 8>

approximately to (corresponding Fig. 2) upper or bottom edge of the brush body. Also it is possible to train the brush body camp so large that the brush body does not step no more when swivelling beyond the contour of the Bürstenkörperlagers, so that one feels the movements of the brush body in the oral cavity hardly more.

Schutzanspruch: 1) Toothbrush, existing from axis of rotation (4), longitudinal with Borsten equipped brush body, is mounted at which an elongated Borstenstiel, characterised in that of the bursting bodies (3) around one transverse to the brush handle (1), rotatable at the brush handle (1) journaled is, whereby the brush body (3) is in both crosswise to the brushing A

HANDLE (1) and to the axis of rotation (4) longitudinal direction (5) by its axis of rotation (4) into a larger Borstenfeldtell (6) and a smaller Borstenfeldtell (7) the divided.

2@ toothbrush according to claim 1, characterised in that of the brush bodies (3) circular Grundriss has and eccentric rotatably supported is.

3) Toothbrush according to claim 1 or 2, characterised in that the toothbrush in actual known incoming goods! SE pus plastic exists, whereby the rotatable storage becomes formed by a pin (13) at the brush body (3) and by a bore in the brush handle (1).

4) Tooth chests according to claim 3, characterised in that of the pins (14) a thickening exhibits, which intervenes in a recess in the bore pushbutton-like.

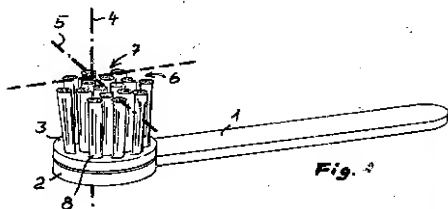


Fig. 1

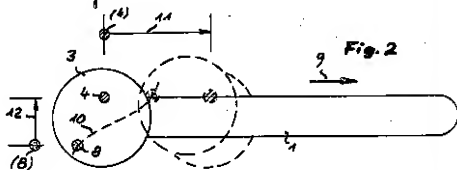


Fig. 2

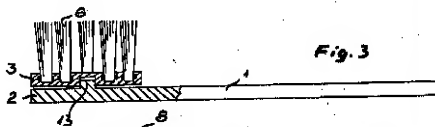


Fig. 3

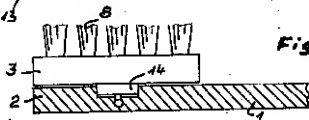


Fig. 4